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तकनीकी श्रेणी कीटनाशियों के नमूने लेने की पद्धति

(पहला पुनरीक्षण)

Indian Standard

METHODS OF SAMPLING FOR TECHNICAL GRADE PESTICIDES

(First Revision)

ICS 65.100

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

September 1996

Price Group *2*

Pesticides Sectional Committee, FAD 1

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Pesticides Sectional Committee had been approved by the Food and Agriculture Division Council.

Technical grade pesticides are the raw materials used for pesticidal formulations. As the quality of finished product depends on the quality of raw materials, it is essential that raw materials purchased by the formulators are of desired quality.

The sampling plan given in this standard will enable the formulators to evaluate the quality of materials offered to them in different consignments.

This standard was first published in 1984 incorporating procedure for solid and liquid forms only. This revision incorporates *infer alia* product classification and sampling procedure for solid, liquid, viscous liquid and meltable solid technical grade pesticides.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

METHODS OF SAMPLING FOR TECHNICAL GRADE PESTICIDES

(First Revision)

1 SCOPE

This standard prescribes the methods of sampling for solid liquid viscous liquid and meltable solid. technical grade pesticides. used to formulate various pesticidal formulations.

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
4905: 1968	Methods for random sampling

3 TERMINOLOGY

3.0 For the purpose of this standard, the following definitions shall apply.

3.1 Sample

Selection of bags or drums from a lot for inspection.

3.2 Individual Sample

A sample prepared from a sample bag or drum taken from the lot.

3.3 Composite Sample

A sample prepared by mixing approximately equal quantities of material frqm each of the sample bags or drums selected from the lot.

3.4 **Test Sample**

A Sample as prepared for testing.

4 PRODUCT CLASSIFICATION

4.1 Liquids

Technical materials which are homogeneous liquids at ambient temperature and do not need any treatment before sampling.

4.2 Viscous Liquids and Meltable Solids

Technical materials which do not undergo detectable decomposition during melting are warmed until sufficiently mobile or completely molten and then the samples are drawn similar to liquid sampling after confirming that they are homogeneous.

4.3 Solids

Technical materials which are powder, flakes, lump or granular crystalline at ambient temperature.

5 GENERAL REQUIREMENTS

In drawing, preparing, storing and handling of the test samples, the precautions given under 5.1 to 5.6 shall be taken.

5.1 Samples shall be neither taken nor stored at a place exposed to such weather as would affect basic change in its characteristics.

5.2 Precautions shall be taken to protect the samples, the sampling instruments and the containers for samples from contamination.

5.3 The sampling instrument shall be made of glass or a metal on which the material has no reaction and shall be clean and dry when used.

5.4 Sample containers shall be of such a size that they are almost but not completely filled by the sample. They shall be clean, dry, leak-proof and be made of the material which shall not react with the contents of the sample. Brown glass jars or tins with vapour tight closure compatible with material are recommended.

5.5 Once the container is opened, care shall be taken to avoid the risk of deterioration of contents due to the presence of various factors, such as air, light, moisture and temperature.

5.6 Each sample container shall be sealed airtight after filling and marked with full details of the sample, such as date of manufacture, date of sampling, name of the manufacturer and other particulars of the consignment.

5.6.1 Sample or its container shall be marked to indicate the nature of the material and the risks associated with it wherever necessary.

5.6.2 As some of the pesticides are photo-degradable, sample containers should be light proof or protected from light.

6 SAMPLING APPARATUS

6.1 Liquids/Viscous Liquids and Meltable Solids

Open sampling tube (see Fig. 1), should be made from borosilicate glass. It shall be of 20 to 40 mm diameter and 400 to 800 mm in length. This tube may be graduated at each 10 mm interval. The upper and lower ends are conical and of 5 to 10 mm diameter at the narrow ends. Tube may have rings at the top for holding.

6.2 Solids

A multi-slot tube thief as shown in Fig. 2, which is also called as bag trier and consists of two barrels (outer and inner) having slots at equal intervals. The working end of outer barrel is pointed for easy insertion into the bag or drum. The sampler should be made up of steel, brass or any other suitable material for withdrawing sample from different layers of the bag or drum. The slots of the trier can be opened or closed by rotating the inner barrel head.

7 SAMPLING PROCEDURE

7.1 Liquid Samples

Generally the product should be homogenized by inverting the pack and rolling. Then open the lid or cap and for withdrawing a sample, the tube is first closed at the top with the thumb or a stopper and lowered until the desired depth is reached. It is then opened and the material is allowed to fill naturally. Finally the tube is closed by thumb or a stopper and sample is transferred to container.

7.2 Viscous Liquids and Meltable Solids

Provided it is known that the product to be sampled does not undergo decomposition during melting, warm the material until sufficiently mobile or completely molten. Following procedure may be adopted for sampling of such products.

Products packed in drums would be heated to a temperature gradient of 40 to 50°C using a suitable water bath for a period about 4 to 6 hours to ensure complete liquification. Thereafter, immediately the drums will be rolled for about 15 minutes to completely homogenize the contents. Samples are then drawn using procedure given in 7.1.

NOTE — The common technical grade pesticides covered in this clause are the anilophos, monocrotophos, cypermethrin, fenvalerate, dimethoate, methyl parathion, chlorpyrifos, alachlor, phosalone and butachlor, etc.

7.3 Solids

Insert the tube thief (bag trier) with the slots closed into the container until the point rests on the bottom. Turn the handle to open the slots and allow the material to fill the thief. Close the slots, withdraw the thief and place a plastic bag around the thief. Using thread close the plastic bag around the top of the thief and allow the contents to flow into the bag. Repeat the procedure at different sampling positions in the container until sufficient sample is obtained.

8 LOT INSPECTION

8.1 Scale of Sampling

8.1.1 Lot

All the drums or bags, in a single consignment belonging to the same manufacturer, same type and grade and produced under relatively uniform conditions of manufacture shall constitute a lot.

8.1.2 For ascertaining the conformity of material to the requirements of the specification, samples shall be tested from each lot separately.

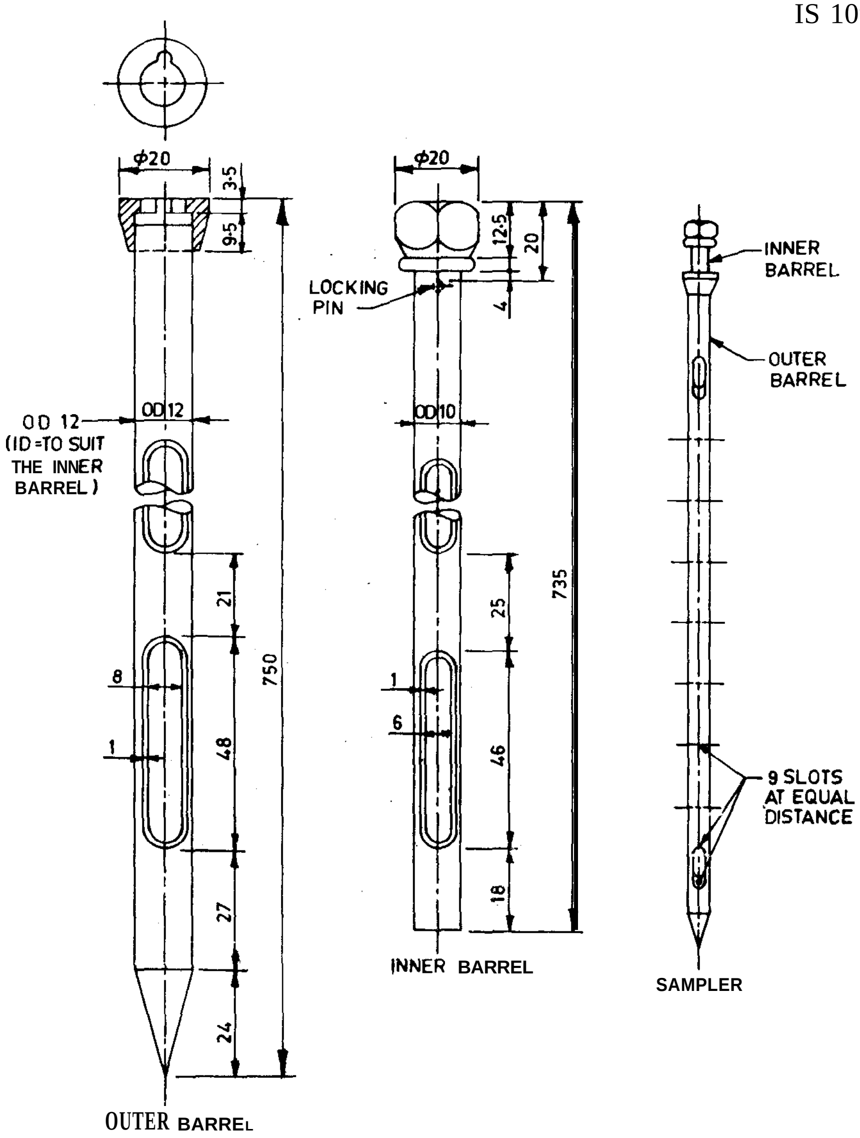
8.1.3 Number of drums or bags to be chosen from a lot shall depend on the size of the lot and shall be according to Table 1.

These drums or bags shall be selected from the lot at random. In order to ensure the randomness of selection, procedure given in IS 4905 : 1968 may be followed.

8.1.4 *Preparatisn of Test Samples and Referee Samples*

8.1.4.1 Before drawing the test sample, in the case of liquid, viscous liquid and meltable solid pesticides, the contents of each drum shall be properly mixed by suitable means. The total quantity of material drawn from each bag or drum shall be sufficient for making triplicate determinations for. all the characteristics given in the specification.

8.1.4.2 Mix thoroughly all portions of material drawn from the same bag or drum. Out of these



All dimensions in millimetres

FIG. 1 TYPICAL SAMPLER FOR SOLID PESTICIDES

portions, a small but approximately equal quantity of material shall be taken from each selected bag or drum and shah be well mixed so as to form a composite sample. The quantity of material in the composite sample shall be sufficient for making triplicate determination for all the characteristics to be tested on the composite sample. This composite sample shall be divided into three equal parts, one for the purchaser, another for the supplier and the third for the referee.

8.1.4.3 The remaining portions of the material from each bag or drum (after a small quantity needed for the formulation of the composite sample has been taken out) shall be divided into three equal parts. These parts shall be immediately transferred to suitable sample containers as given in 5.4 which are then sealed air-tight and labelled with all the particulars of sampling given in 5.6. The material in each such sealed sample container shall constitute a test sample. These individual samples shall be in such a way that each set has a sample representing each bag or drum selected (see Table 1). One of these three sets shall be marked for the purchaser, another for the supplier and the third for the referee.

8.1.4.4 *Referee samples*

Referee samples shall consist of the. composite sample (see 8.1.4.2) and a set of individual test samples (see 8.1.4.3) marked for this purpose and shall bear the seals of the purchaser and the supplier. These shall be kept at a place agreed to between the two so as to be used in case of dispute.

9 NUMBER OF TESTS

9.1 Liquid, Viscous Liquid and Meltable Solid Pesticides

9.1.1 Technical content. moisture and specific gravity shall be tested on the individual samples.

9.1.2 The remaining requirements shall be tested on the composite sample.

9.2 Solid Pesticides

9.2.1 Technical content and acidity or alkalinity shall be tested on the individual samples.

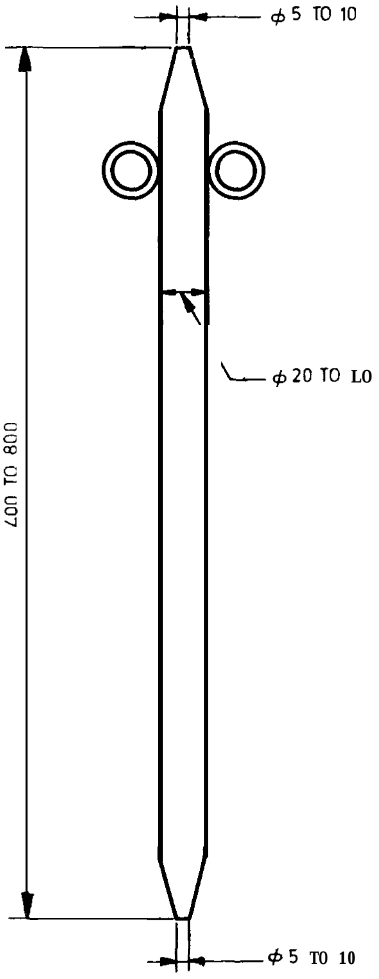
9.2.2 The remaining requirements shall be tested on the composite sample.

10 CRITERIA FOR CONFORMITY

10.1 The lot shall be declared as conforming to the requirements of the specification if **10.1.1** and 10.1.2 are satisfied.

10.1.1 All the test results for each of the characteristics tested on individual samples meet the corresponding requirements given in the material specification.

10.1.2 For the remaining requirements, all the test results of the composite sample satisfy the relevant requirements given in the material specification.



All dimensions in millimetres.

FIG. 2 OPEN SAMPLING TUBE

Table 1 Scale of Sampling for Solid Liquid, Viscous Liquid and Meltable Solid Pesticides

(*Clause* **8.1.3**)

Number of Drums/Bags in the Lot (1)	Sample Size for Solid Pesticides (2)	Sample Size for Liquid, Viscous Liquids and Meltable Solid Pesticides (3)
up to 15	2	1
16 to 50	3	2
51 and above	4	3

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